CLAIMS

What is claimed is:

1. A rotary cutting device, comprising:

an outer cutting head having:

a cylindrical structure with an internal bore, and

a plurality n_{EXT} of outer teeth arrayed at a first outer head end; and

an inner cutting head, including:

an outside diameter,

a first shaft end and a second shaft end, and

a plurality n_{INT} of inner teeth arrayed at a first inner head end;

wherein n_{EXT} and n_{INT} are relatively prime numbers.

2. The rotary cutting device of claim 1 wherein n_{INT} is 4 and n_{EXT} is selected from the group consisting of 5, 7, 9 and 11.

3. The rotary cutting device of claim 2 wherein n_{EXT} is 9.

4. The rotary cutting device of claim 1 wherein n_{INT} is 3 and n_{EXT} is selected from the group consisting of 4, 5, 7, 8, 10 and 11.

5. The rotary cutting device of claim 1 wherein n_{INT} is 5 and n_{EXT} is selected from the group consisting of 4, 6, 7, 8, 9 and 11.

6. A rotary cutting device, comprising:

a first cutting head including a plurality of first cutting teeth circularly arrayed thereon, each of said first cutting teeth including a first cutting edge; and

a second cutting head rotatably arranged relative to said first cutting head and including a plurality of second cutting teeth circularly arrayed thereon, each of said second cutting teeth including a second cutting edge;

wherein said first and second cutting teeth are disposed such that rotation of the first and second cutting heads can substantially align no more than one first cutting edge with one second cutting edge.

7. The rotary cutting device of claim 6 wherein the plurality of first cutting teeth and the plurality of second cutting teeth are relatively prime numbers.

8. The rotary cutting device of claim 6 wherein the plurality of first cutting teeth is 4 and the plurality of second cutting teeth is selected from the group consisting of 5, 7, 9 and 11.

9. The rotary cutting device of claim 6 wherein the plurality of first cutting teeth is 3 and the plurality of second cutting teeth is selected from the group consisting of 4, 5, 7, 8, 10 and 11.

10. The rotary cutting device of claim 6 wherein the plurality of first cutting teeth is 5 and the plurality of second cutting teeth is selected from the group consisting of 4, 6, 7, 8, 9 and 11.

11. A method for manufacturing a rotary cutting blade assembly, comprising:

providing an outer cutter assembly having a central bore and a plurality of teeth circularly disposed in a cutting region thereon;

positioning a mandrel within the central bore at least in the cutting region, said mandrel having an outside diameter less than the central bore;

bead-blasting said plurality of teeth; and

removing the mandrel from the central bore.

12. The method of claim 11, wherein bead-blasting reduces the central bore of the cutting region.

13. The method of claim 11, wherein bead-blasting reduces the clearance between the central bore of the cutting region and the outside diameter of the mandrel.

14. The method of claim 11, wherein bead-blasting sharpens cutting edges of said teeth.

14A. The method of claim 11, wherein bead-blasting serrates cutting edges of said teeth.

15. The method of claim 11 wherein the outer cutter assembly is constructed of a 300 series stainless steel, a 400 series stainless steel, an alloy steel, or brass.

16. A rotary hair trimmer, comprising:

a first cutting head including a plurality of first cutting teeth circularly arrayed thereon, each of said first cutting teeth including a first leading cutting edge disposed thereon at a first leading axial rake angle relative to a rotational axis of the first head and a first trailing cutting edge disposed thereon at a first trailing axial rake angle relative to a rotational axis of the first head; and

a second cutting head rotatably arranged relative to said first cutting head and including a plurality of second cutting teeth circularly arrayed thereon, each of said second cutting teeth including a second leading cutting edge disposed at a second leading axial rake angle relative to a rotational axis of the second head and a second trailing cutting edge disposed at a second trailing axial rake angle relative to a rotational axis of the second head;

wherein said first leading axial rake angle is different from said second trailing axial rake angle;

wherein said second leading axial rake angle is different from said first trailing axial rake angle.

17. The rotary hair trimmer of claim 16 wherein:

a difference between said first leading axial rake angle and said second trailing axial rake angle is in the range of 1-5 degrees; and

a difference between said second leading axial rake angle and said first trailing axial rake angle is in the range of 1-5 degrees.

18. The rotary hair trimmer of claim 17 wherein:

the difference between said first leading axial rake angle and said second trailing axial rake angle is about 2.3 degrees; and

the difference between said second leading axial rake angle and said first trailing axial rake angle is about 2.3 degrees.

19. The rotary hair trimmer of claim 16 wherein each of said first leading axial rake angle and said second trailing axial rake angle is not equal to 0 degrees.

20. The rotary hair trimmer of claim 19 wherein each of said second leading axial rake angle and said first trailing axial rake angle is not equal to 0 degrees.

21. The rotary hair trimmer of claim 16 wherein each of said second leading axial rake angle and said first trailing axial rake angle is not equal to 0 degrees.

22. The rotary hair trimmer of claim 21 wherein each of said first leading axial rake angle and said second trailing axial rake angle is not equal to 0 degrees.

22A. The rotary hair trimmer of claim 21 wherein said first leading axial rake angle is not equal said second trailing axial rake angle.

23. The rotary hair trimmer of claim 16, further comprising:

an inner bore of said first cutting head, said inner bore having a diameter substantially equal to an outside diameter of said second cutting head.